

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (CURRENTLY AMENDED) A seed of soybean cultivar designated 0509237, wherein a representative sample of seed of said cultivar was deposited under ATCC Accession No. PTA- PTA-6898.
2. (ORIGINAL) A soybean plant, or a part thereof, produced by growing the seed of claim 1.
3. (ORIGINAL) A tissue culture of regenerable cells produced from the plant of claim 2.
4. (PREVIOUSLY PRESENTED) A protoplast produced from the tissue culture of claim 3.
5. (PREVIOUSLY PRESENTED) The tissue culture of claim 3, wherein said regenerable cells are from a plant part selected from the group consisting of leaf, pollen, embryo, root, root tip, anther, pistil, flower, seed, pod, and stem.
6. (CURRENTLY AMENDED) A soybean plant regenerated from the tissue culture of claim 3, wherein the plant has all of the morphological and physiological characteristics of cultivar 0509237, a representative sample of seed of said cultivar having been deposited under ATCC Accession No. PTA- PTA-6898.
7. (PREVIOUSLY PRESENTED) A method for producing an F1 hybrid soybean seed, comprising crossing the plant of claim 2 with a different soybean plant and harvesting the resultant F1 hybrid soybean seed wherein an F1 hybrid soybean seed is produced.
8. – 9. (CANCELED)
10. (PREVIOUSLY PRESENTED) A method for producing a male sterile soybean plant comprising transforming the soybean plant of claim 2 with a nucleic acid molecule that confers male sterility wherein a male sterile soybean plant is produced.
11. (ORIGINAL) A male sterile soybean plant produced by the method of claim

10.

12. (PREVIOUSLY PRESENTED) A method of producing an herbicide resistant soybean plant comprising transforming the soybean plant of claim 2 with a transgene that confers herbicide resistance wherein an herbicide resistant soybean plant is produced.

13. (ORIGINAL) An herbicide resistant soybean plant produced by the method of claim 12.

14. (CURRENTLY AMENDED) The soybean plant of claim 13, wherein the transgene that confers resistance to an herbicide is ~~selected~~ selected from the group consisting of imidazolinone, sulfonylurea, glyphosate, glufosinate, L-phosphinothricin, triazine and benzonitrile.

15. (PREVIOUSLY PRESENTED) A method of producing an insect resistant soybean plant comprising transforming the soybean plant of claim 2 with a transgene that confers insect resistance wherein an insect resistant soybean plant is produced.

16. (ORIGINAL) An insect resistant soybean plant produced by the method of claim 15.

17. (ORIGINAL) The soybean plant of claim 16, wherein the transgene encodes a *Bacillus thuringiensis* endotoxin.

18. (PREVIOUSLY PRESENTED) A method of producing a disease resistant soybean plant comprising transforming the soybean plant of claim 2 with a transgene that confers disease resistance wherein a disease resistant soybean plant is produced.

19. (ORIGINAL) A disease resistant soybean plant produced by the method of claim 18.

20. (PREVIOUSLY PRESENTED) A method of producing a soybean plant with modified fatty acid metabolism or modified carbohydrate metabolism comprising transforming the soybean plant of claim 2 with a transgene encoding a protein selected from the group consisting of fructosyltransferase, levansucrase, alpha-amylase, invertase and starch branching enzyme or the antisense of a stearyl-ACP desaturase gene wherein the transgene is expressed and the fatty acid metabolism or the

carbohydrate metabolism of the soybean plant is modified.

21. (PREVIOUSLY PRESENTED) A soybean plant having modified fatty acid metabolism or modified carbohydrate metabolism produced by the method of claim 20.

22. (CURRENTLY AMENDED) A soybean plant, or a part thereof, having all of the physiological and morphological characteristics of soybean cultivar 0509237, representative sample of seed of said cultivar having been deposited under ATCC Accession No. PTA-PTA-6898.

23. – 29. (CANCELED)

30. (NEW) A method of introducing a desired trait into soybean cultivar 0509237 comprising:

- (a) crossing 0509237 plants grown from 0509237 seed, a representative sample of seed of which has been deposited under ATCC Accession No. PTA-6898, with plants of another soybean cultivar that comprise and express a desired trait to produce progeny plants, wherein the desired trait is selected from the group consisting of male sterility, herbicide resistance, insect resistance, and disease resistance;
- (b) selecting one or more progeny plants that have and express the desired trait to produce selected progeny plants;
- (c) crossing the selected progeny plants with the 0509237 plants to produce backcross progeny plants;
- (d) selecting for backcross progeny plants that have and express the desired trait and all of the physiological and morphological characteristics of soybean cultivar 0509237 listed in Table 1 to produce selected backcross progeny plants; and
- (e) repeating steps (c) and (d) three or more times in succession to produce selected fourth or higher backcross progeny plants that comprise and express the desired trait and all of the physiological and morphological characteristics of soybean cultivar 0509237 listed

in Table 1 as determined at the 5% significance level when grown in the same environmental conditions.

31. (NEW) A plant produced by the method of claim 30, wherein the plant has and expresses the desired trait and all of the physiological and morphological characteristics of soybean cultivar 0509237 listed in Table 1 as determined at the 5% significance level when grown in the same environmental conditions.

32. (NEW) The plant of claim 31 wherein the desired trait is herbicide resistance and the resistance is conferred to an herbicide selected from the group consisting of imidazolinone, sulfonylurea, glyphosate, glufosinate, L-phosphinothricin, triazine and benzonitrile.

33. (NEW) The plant of claim 31 wherein the desired trait is insect resistance and the insect resistance is conferred by a transgene encoding a *Bacillus thuringiensis* endotoxin.

34. (NEW) The plant of claim 31 wherein the desired trait is male sterility and the trait is conferred by a cytoplasmic nucleic acid molecule that confers male sterility.

35. (NEW) A method of modifying fatty acid metabolism or modifying carbohydrate metabolism of soybean cultivar 0509237 comprising:

- (a) crossing 0509237 plants grown from 0509237 seed, a representative sample of seed of which has been deposited under ATCC Accession No. PTA-6898, with plants of another soybean cultivar that comprise and express a nucleic acid molecule encoding an enzyme selected from the group consisting of phytase, fructosyltransferase, levansucrase, alpha-amylase, invertase and starch branching enzyme or the antisense of a stearyl-ACP desaturase gene;
- (b) selecting one or more progeny plants that have and express said nucleic acid molecule to produce selected progeny plants;
- (c) crossing the selected progeny plants with the 0509237 plants to produce backcross progeny plants;
- (d) selecting for backcross progeny plants that have and express said nucleic

acid molecule and all of the physiological and morphological characteristics of soybean cultivar 0509237 listed in Table 1 to produce selected backcross progeny plants; and

- (e) repeating steps (c) and (d) three or more times in succession to produce selected fourth or higher backcross progeny plants that comprise and express said nucleic acid molecule and have all of the physiological and morphological characteristics of soybean cultivar 0509237 listed in Table 1 as determined at the 5% significance level when grown in the same environmental conditions.

36. (NEW) A plant produced by the method of claim 35, wherein the plant comprises and expresses the nucleic acid molecule and has all of the physiological and morphological characteristics of soybean cultivar 0509237 listed in Table 1 as determined at the 5% significance level when grown in the same environmental conditions.